



Tfw

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re the application of:

Attorney Docket No.: 1101.111US02

Ellingsrud et al.

Confirmation No.: 9358

Application No.: 10/770,115

Filed: February 2, 2004

Group Art Unit: 2862

For: ELECTROMAGNETIC METHOD AND APPARATUS FOR DETERMINING THE
NATURE OF SUBTERRANEAN RESERVOIRS

INFORMATION DISCLOSURE STATEMENT

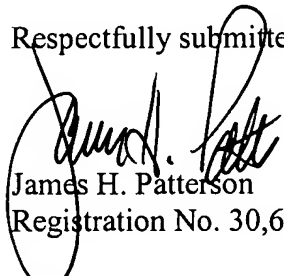
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Pursuant to 37 C.F.R. § 1.56, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached Form PTO-1449. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

Copies of the references were cited by or submitted to the Office in Patent Application No. 10/214,377, filed August 7, 2002, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these references are not attached. 37 C.F.R. § 1.98(d).

Respectfully submitted,


James H. Patterson
Registration No. 30,673

Application No. 10/770,115

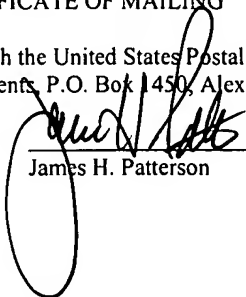
Customer No. 24113
Patterson, Thunte, Skaar & Christensen, P.A.
4800 IDS Center
80 South 8th Street
Minneapolis, Minnesota 55402-2100
Telephone: (612) 349-5741

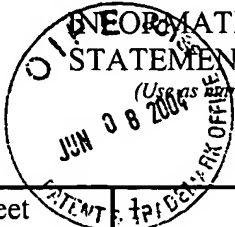
Please grant any extension of time necessary for entry; charge any fee due to Deposit Account No. 16-0631.

CERTIFICATE OF MAILING

I hereby certify that this document is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on

06/02/04
Date of Deposit


James H. Patterson

Substitute for form 1449/PTO				Complete if Known	
				Application Number	10/770,115
				Filing Date	February 2, 2004
				First Named Inventor	Ellingsrud et al.
				Art Unit	2862
				Examiner Name	
Sheet PATENT	of	5	Attorney Docket Number 1101.111US02		

U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number-Kind Code ² (if known)		
		US-6,339,333	01/2002	Kuo
		US-6,246,240	06/2001	Vail III
		US-6,225,806	05/2001	Millar et al.
		US-6,188,222	02/2001	Seydoux et al.
		US-6,188,221	02/2001	Van de Kop et al.
		US-6,184,685	02/2001	Paulk et al.
		US-6,181,138	01/2001	Hagiwara et al.
		US-6,163,155	12/2000	Bittar
		US-6,157,195	12/2000	Vail, III
		US-6,060,885	05/2000	Tabarovsky et al.
		US-6,023,168	02/2000	Minerbo
		US-6,002,357	12/1999	Redfern et al.
		US-5,955,884	09/1999	Payton et al.
		US-5,892,361	04/1999	Meyer, Jr. et al.
		US-5,886,526	03/1999	Wu
		US-5,877,995	03/1999	Thompson et al.
		US-5,841,280	11/1998	Yu et al.
		US-5,811,973	09/1998	Meyer, Jr.
		US-5,767,679	06/1998	Schroder

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)			
		EP 0087271	08/1983		
		EP 0219234	04/1987		
		EP 0512756	11/1991		
		EP 0814349	12/1997		
		FR 2479992	10/1981		
		GB 2155182	09/1985		

EXAMINER SIGNATURE	DATE CONSIDERED
--------------------	-----------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as much space as necessary)</i>			<i>Complete if Known</i>		
			Application Number	10/770,115	
			Filing Date	February 2, 2004	
			First Named Inventor	Ellingsrud et al.	
			Art Unit	2862	
			Examiner Name		
Sheet	2	of	5	Attorney Docket Number	1101.111US02

U.S. PATENT DOCUMENTS				
EXAMINER INITIAL*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number-Kind Code ² (if known)		
		US-5,689,068	11/1997	Locatelli et al.
		US-5,563,513	10/1996	Tasei et al.
		US-H1561	07/1996	Thompson
		US-H1524	04/1996	Thompson et al.
		US-5,486,764	01/1996	Thompson et al.
		US-H1490	09/1995	Thompson et al.
		US-5,400,030	03/1995	Duren et al.
		US-5,373,443	12/1994	Lee et al.
		US-5,280,284	01/1994	Johler
		US-5,192,952	03/1993	Johler
		US-5,177,445	01/1993	Cross
		US-5,025,218	06/1991	Ramstedt
		US-4,835,474	05/1989	Parra et al.
		US-4,760,340	07/1988	Denzau et al.
		US-4,652,829	03/1987	Safinya
		US-4,633,182	12/1986	Dzwinel
		US-4,617,518	10/1986	Smka
		US-4,616,184	10/1986	Lee et al.
		US-4,594,551	06/1986	Cox et al.

FOREIGN PATENT DOCUMENTS					
EXAMINER INITIAL [*]	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)			
		GB 2256715	12/1992		
		GB 2301902	12/1996		
		WO 81/01617	06/1981		
		WO 96/06367	02/1996		
		WO 98/28638	07/1998		
		WO 00/00850	01/2000		

EXAMINER SIGNATURE	DATE CONSIDERED
-----------------------	--------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Substitute for form 1449/PTO			Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Application Number	10/770,115
			Filing Date	February 2, 2004
			First Named Inventor	Ellingsrud et al.
			Part Unit	2862
			Examiner Name	
Sheet	3	of	Attorney Docket Number	1101.111US02

U.S. PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. ¹	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document
		Number-Kind Code ² (if known)		
		US-4,547,733	10/1985	Thoraval
		US-4,506,225	03/1985	Loveless et al.
		US-4,451,789	05/1984	Meador
		US-4,446,434	05/1984	Sternberg et al.
		US-4,417,210	11/1983	Rocroie t al.
		US-4,308,499	12/1981	Thierbach et al.
		US-4,258,322	03/1981	Rocroi et al.
		US-4,258,321	03/1981	Neale, Jr.
		US-4,079,309	03/1978	Seeley
		US-4,047,098	09/1977	Duroux
		US-4,010,413	03/1977	Daniel
		US-3,806,795	04/1974	Morey
		US-3,052,836	09/1962	Postma
		US-2,531,088	11/1950	Thompson
		US-2,077,707	04/1937	Melton
		US-		
		US-		
		US-		
		US-		

FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL*	Cite No. ¹	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	T ⁶
		Country Code ³ Number ⁴ Kind Code ⁵ (if known)			
		WO 00/13037	03/2000		
		WO 00/13046	03/2000		
		WO 00/63718	10/2000		
		WO 01/55749	08/2001		

EXAMINER SIGNATURE	DATE CONSIDERED
-----------------------	--------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹Applicant's unique citation designation number (optional). ²See Kinds Codes of USPTO Patent Documents at www.uspto.gov or MPEP 901.04. ³Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). ⁴For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁵Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. ⁶Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

Substitute for form 1449/PTO INFORMATION DISCLOSURE STATEMENT BY APPLICANT <i>(Use as many sheets as necessary)</i>			Complete if Known	
			Application Number	10/770,115
			Filing Date	February 2, 2004
			First Named Inventor	Ellingsrud et al.
			Art Unit	2862
Sheet 4 of 4			Examiner Name	
			Attorney Docket Number	1101.111US02

NON PATENT LITERATURE DOCUMENTS

EXAMINER INITIAL*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		Ellingsrud et al., "How Electromagnetic Sounding Technique Could be Coming to Hydrocarbon E & P", 20 First Break (March 2002).	
		Eidesmo et al., "Sea Bed Logging (SBL), a new method for remote and direct identification of hydrocarbon filled layers in deepwater areas", 20 First Break (March 2002).	
		Kaufman et al., "EM Field of an Electric Dipole on the Surface of a Medium Containing a Thin Resistant Layer", Frequency and Transient Soundings, publ. Elsevier, (1983).	
		Kaufman et al., 1981 Annual Meeting Abstracts: Marine EM Prospecting System, 47 Geophysics 431 (1982).	
		Garg et al., "Synthetic Electric Sounding Surveys Over Known Oil Fields", 49 Geophysics 1959-67 (November 1984).	
		Yuan et al., "The Assessment of Marine Gas Hydrates Through Electrical Remote Sounding: Hydrate Without a BSR?", 27 Geophys. Res. Letts. 204-217 (August 15, 2000).	
		Edwards, "On the Resource evaluation of Marine Gas Hydrate Deposits Using Sea-Floor Transient Electric Dipole-Dipole Methods", 62 Geophysics 63-74 (January 1997).	
		Chave et al., "Some Comments on Seabed Propagation of ULF/ELF Electromagnetic Fields", 25 Radio Science 825-36 (September 1990).	
		MacGregor et al., "Use of Marine Controlled-Source Electromagnetic Sounding for Sub-Basalt Exploration", 48 Geophys. Prosp. 1091-1106 (April 2000).	
		MacGregor et al., "Marine Controlled Source Electromagnetic Sounding: Development of a Regularized Inversion for 2-Dimensional Resistivity Structures", 1 LITHOS Science Report 103-109 (April 1999).	
		MacGregor et al., "The RAMESSES Experiment - III. Controlled-Source Electromagnetic Sounding of the Reykjanes Ridge", 135 Geophys. J. Int. 773-89 (July 1998).	

EXAMINER SIGNATURE	DATE CONSIDERED
-----------------------	--------------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.

This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.

Substitute for form 1449/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Use as many sheets as necessary)		Application Number	10/770,115
		Filing Date	February 2, 2004
		First Named Inventor	Ellingsrud et al.
		Art Unit	2862
		Examiner Name	
Sheet	5	of	Attorney Docket Number 1101.111US02
NON PATENT LITERATURE DOCUMENTS			
EXAMINER INITIAL*	Cite No. ¹	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published	T ²
		Sinah et al., "Magmatic Processes at Slow Spreading Ridges: Implications of the RAMESSES Experiment at 57 deg. 45'N on the Mid-Atlantic Ridge," 135 Geophys. J. Int. 731-45 (July 1998).	
		Sinah et al., "Evidence for Accumulated Melt Beneath the Slow-Spreading Mid-Atlantic Ridge," 355 Phil. Trans. R. Soc. Lond. A 233-53 (January 1997).	
EXAMINER SIGNATURE	DATE CONSIDERED		
<p>*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹Applicant's unique citation designation number (optional). ²Applicant is to place a check mark here if English language Translation is attached.</p> <p>This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 120 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450 Alexandria, VA 22313-1450.</p> <p style="text-align: center;">If you need assistance in completing the form, call 1-800-PTO-9199 (1-800-786-9199) and select option 2.</p>			